AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-17. (cancelled)

18. (currently amended) A method of simulating a missile with ~~by means of~~ a missile simulator in a single aircraft during testing of the single aircraft which includes a ~~weapon~~ weapons system for controlling missiles with which the aircraft may be equipped, the method comprising:

[[i)]] (a) generating in the missile simulator a target seeker command position for a simulated target seeker to command~~, whereby~~ the simulated target seeker ~~is commanded~~ to adopt a predetermined position, wherein the simulated target seeker is assumed to move at finite speeds and that its movement is constrained to a single plane;

[[ii)]] (b) receiving the target seeker command position from the missile simulator at the ~~weapon~~ weapons system;

[[iii)]] (c) simulating behavior of the missile in a computer model in the missile simulator to generate an actual value signal adapted to the ~~weapon~~ weapons system, the actual value signal including values of an amplitude (A) and a phase angle (φ) of the simulated missile;

[[iv)]] (d) generating in the ~~weapon~~ weapons system a continuous trouble signal [[from]] as a difference ~~deviation~~ between the target seeker command position and the actual value signal~~, wherein~~;

(e) measuring the continuous trouble signal by an interface module~~; is measured continuously and~~;

(f) ~~wherein~~ from the measured continuous trouble signal, determining sampled values for a vector indicating an error in the amplitude (A) and an error in the phase angle (φ), which represent a difference between a vector S^C corresponding to the target seeker command position and a vector S_O corresponding to the actual value signal~~, are determined and sent~~;

(g) sending the sampled values to the computer model in the missile simulator~~, and wherein the values for A and φ are determined by correlating measured results with known desired results~~;

[[v)]] (h) using the trouble signal as a control signal for the simulated target seeker;

(i) correlating measured results with known desired results to determine values of the amplitude (A) and phase angle (φ) of the actual value signal; and

[[vi)]] (j) repeating steps ~~iii) – v)~~ (c)-(i) to control the computer model toward a target by the target seeker during the simulation of the computer model and the target seeker.

19. (cancelled)

20. (previously presented) The method in accordance with claim 18, wherein for each trouble signal, the computer model determines a corresponding actual value signal.

21. (previously presented) The method in accordance with claim 20, wherein for each trouble signal the computer model determines a new vector S^C including an amplitude and a phase angle of the new target seeker command position.

22. (previously presented) The method in accordance with claim 20, wherein a time-continuous actual value signal is reproduced from a time-discrete vector from the computer model.

23. (currently amended) A method of simulating a missile using a missile simulator in a single aircraft comprising:

in the missile simulator:[[,]]

(a) receiving [[a]] an input signal representing a deviation of a position of a simulated target seeker from a commanded position of the simulated target seeker,

(b) simulating a behavior of the missile in a computer model using the input signal ~~representing a deviation of the simulated target seeker from a~~

~~commanded position of the simulated target seeker~~ to generate an actual value signal adapted to an aircraft ~~weapon~~ weapons system for controlling missiles, and

(c) transmitting the actual value signal to the aircraft ~~weapon~~ weapons system; [[and]]

in the aircraft ~~weapon~~ weapons system for controlling missiles:[[,]]

(d) receiving the actual value signal, and

(e) generating [[a]] an updated signal representing a deviation of a position of the simulated target seeker from a commanded position of the simulated target seeker using the received actual value signal; [[and]]

(f) using the generated updated signal ~~representing a deviation of the simulated target seeker from a commanded position of the simulated target seeker~~ to control the simulated target seeker; and

(g) repeating steps (a)-(f) to control the computer model toward a target using the updated signal as the input signal.

24. (previously presented) The method in accordance with claim 23, wherein for each signal representing a deviation of the simulated target seeker from a commanded position of the simulated target seeker, the computer model determines a corresponding actual value signal.

25. (previously presented) The method in accordance with claim 20, wherein for each signal representing a deviation of the simulated target seeker from a commanded position of the simulated target seeker the computer model determines a new vector S^C including an amplitude and a phase angle of the new target seeker command position.

26. (previously presented) The method in accordance with claim 20, wherein a time-continuous actual value signal is reproduced from a time-discrete vector from the computer model.

27. (Currently Amended) A missile simulator apparatus used in a single aircraft, comprising:

computer circuitry operable to run a computer model of a missile, including a model simulating a target seeker of the missile, the computer model operable to accept a discrete signal representing a deviation of the simulated target seeker from a commanded position of the simulated target seeker, the computer model further operable to output a discrete signal representing an actual value of a position of the simulated target seeker; and

interface circuitry communicatively connectable between the computer circuitry and a weapons system of an aircraft, the interface circuitry operable to accept the discrete signal representing the actual value of the position of the simulated target seeker from the computer circuitry and to output a continuous signal compatible with the weapons system of the aircraft representing the actual value of the position of the simulated target seeker, the interface circuitry further operable to accept from the weapons system of the aircraft a continuous signal representing the deviation of the simulated target seeker from the commanded position of the simulated target seeker and to output to the computer circuitry a discrete signal compatible with the computer circuitry representing the deviation of the simulated target seeker from the commanded position of the target seeker, the computer and interface circuitry facilitate to simulate the computer model and the target seeker so that the computer model is controlled toward a target by the simulated target seeker during repetitive iterations.

28. (previously presented) The apparatus of claim 27, wherein:

the signal compatible with the computer circuitry representing the deviation of the simulated target seeker from the commanded position of the target seeker comprises a signal representing a deviation in amplitude and a deviation in phase angle.

29. (previously presented) The apparatus of claim 28, wherein:

the signal compatible with the computer circuitry representing the deviation of the simulated target seeker from the commanded position of the target seeker is a sampled signal.

30. (previously presented) The apparatus of claim 29, wherein:

the computer circuitry is further operable to calculate a new signal representing an actual value of a position of the simulated target seeker for each sample value of the signal compatible

with the computer circuitry representing the deviation of the simulated target seeker from the commanded position of the target seeker.